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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JAIN, RAJ K

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/345,193

Applicant(s)

ZHANG ET AL.

Examiner

Raj K. Jain

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kompella et al. and Periasamy et al.

Referring to claim 1, Kompella discloses a method of establishing a network path between source and destination nodes, see column 4 lines 50-57. The route is calculated in accordance with an algorithm that insures that adequate bandwidth is available on each leg of the subject connection for proper packet delivery. Once the desired route is calculated, data packets are transmitted along the calculated route from the originating node to the destination node, the route information is placed in the header of the data packet. The criteria's used for measuring timely packet delivery or efficiency is determined by the Quality of Service (QoS) in terms of throughput, latency and jitter, see column 5 lines 25-27.

Kompella further discloses a method of determining the latency of messages traveling within a given network path via time stamping of packets and measuring the roundtrip delay of a test message transmitted, see column 7 lines 35-50. Thus the actual latency of a given path in a computer network having plurality of network nodes is dependent on multiple factors as stated above (bandwidth, delay and latency variations). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kompella, so that the

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latency of a network path can be determined by time stamping the message entering the first entity at one end and time stamping the message again at the second entity at the second end, than measuring the roundtrip delay of the message from the first entity to the second entity and back to the first entity.

Referring to claim 2, network layer addressing is a basic principal for IP uses, proper routing of messages and or packets between desired nodes is done through data link layer which obtains its address from the network layer address, a protocol called ARP (address resolution protocol). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kompella to include ARP which is essential for proper message routing between desired network nodes of interest.

Referring to claims 3-7, Kompella discloses a method of determining the latency of messages traveling within a given network path via time stamping of packets and measuring the roundtrip delay of a test message transmitted between the subject nodes of interest, see column 7 lines 35-50. Kompella also discloses a flow control system amongst a plurality of users comprising of at least one route from one user to another user within the subject route or path see claim 13. Further, a mechanism is provided which allows for the flow control of messages across the network nodes by passing information about the state of network to the end user nodes, see Fig 1. Kompella further discloses on measuring the efficiency of the network by the predefined parameters (QoS) for efficient traffic flow within the subject nodes of interest. Each of the QoS parameters can be monitored simultaneously or separately by having a separate interval timer for each parameter to be considered within the network paths of interest as needed, see Fig 4. Therefore, it would have been obvious to one of ordinary skill in the art at the time of

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the invention was made to modify Kompella, to include a clock management facility at each of the first and second entities, so when generating a test message for the measurement of latency within a path of two specific entities, the messages are time stamped at each of the entities and the latency is calculated based on the roundtrip travel to and from the preselected path.

Furthermore the message at the second entity upon arrival can be forwarded to the next upstream network node along the pre-selected path within the computer network.

Referring to claims 8-12 and 15-16, Kompella discloses a method of determining the latency of messages within a computer network and avoiding path overflow. Kompella does not disclose a set of executable instructions that predefines a path the message will travel within the computer as a readable medium. Periasamy discloses a computer readable medium embodying executable instructions for use of defining communication pathways in a computer network having a plurality of routing devices, see column 4 lines 65-70. The computer readable medium comprises of packets with a header having a destination field and the source routing option in accordance with the routing path of interest, see column 8 lines 62-70. Periasamy further discloses a route-discovery procedure to identify the optimum path the message shall travel, see column 3 lines 28-33. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kompella to include computer readable medium that generates a path state setup message for establishing a path state along a selected path of a computer network and a source routing option that lists the network nodes along the selected path. Further to avoid path problems a path alert option can be included in the computer readable medium to avoid path congestion. Additionally a signaling protocol

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processor can be included to further resolve network traffic flow that can communicate with an options processor to identify an optimum path within the computer network.

3. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Periasamy et. al.

Referring to claims 13 and 14, Periasamy discloses a source routing option by the use of route discovery procedure to identify the optimal path for the message to travel, see column 3 lines 30-40. The first entity issues a frame as an "all-paths explorer" where the packet is received by each station on the network. Each routing device then copies the frame and supplies the information about the route to others. The communication pathways within the computer network include a plurality of nodes and determination of the optimum path is between two nodes at a time, each acting as a source and destination node. Communication between the plurality of interfaces in a computer network can be accomplished by the inclusion of an options processor to identify traffic flow. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Periasamy to include an options processor and also have a signaling protocol to address a path state reservation that would communicate relationship with the options processor to implement an optimum path system.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Periasamy et. al. and further in view of Kidder et. al. Periasamy discloses a source routing option by the use of route discovery procedure to identify the optimal path for the message to travel, see column 3 lines 30-40. Periasamy does not disclose the implementation of the resource reservation protocol within the subject nodes of interest. Kidder discloses the use of the RSVP protocol within the embodiment of the invention, see Fig 1. Minimum and maximum size of the datagram is

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specified within a traffic specification, which allows RSVP to reserves network resources within links comprising of hosts and routers along a network. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Periasamy to include an RSVP protocol within the computer readable medium so as to enhance network performance by efficiently utilizing the network paths having a predefined datagram size for efficient traffic flow.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj K. Jain whose telephone number is 703-305-5652. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

raj

rj
May 14, 2002

KWANG BIN YAO
PRIMARY EXAMINER
